

include all of the limitations of Claims 5, 3, and 1; Claim 16 would include all of the limitations of Claims 5, 3, and 1; and Claim 19 would include all of the limitations of Claims 18, 4, and 2. However, as ultimate base Claims 1 and 2 are clearly allowable over the references applied, the rejection of base Claims 1 and 2 is traversed below.

The outstanding Action presents a rejection of Claims 1-5 and 18 as being obvious over Iwamatsu et al (the 1995 article entitled "*High-Speed 0.5 μ m SOI 1/8 Frequency Divider with Body-Fixed Structure for Wide Range of Applications*) (Iwamatsu) in view of Agari¹ (JA 6-224302), Chen et al (U.S. Patent No. 5,767,549)(Chen), Blake et al (U.S. Patent No. 4,899,202, Blake), Gunning (U.S. Patent No.5,023,488), and Masuda et al (U.S. Patent No. 3,855,6109, Masuda).

The outstanding Action begins by presenting rebuttal arguments that misstate the primary argument of the response filed October 21, 2002 and that fail to comply with the MPEP §707.07(f) requirement that when a rejection is repeated, the arguments that have been actually made in the response as filed against the repeated rejection are to be noted and the substance of each is to be answered. In this regard, the response filed October 21, 2002, does not argue anything about what is "shown in Chen figure 3 and discussed at column 5, lines 25 -30" as asserted at the bottom of page 2 of the outstanding Action. Thus, even though the statement is made here that "Applicant's arguments as submitted 21 October 2002 have been carefully considered," this "careful consideration" has not correctly interpreted the arguments made and has not answered the substance of the arguments actually made.

For the Examiner's convenience and in hopes of compliance with above-noted MPEP

¹ Applicants assume that the indication of "Agair" on page 2 of the outstanding Action statement of the rejection instead of --Agari-- was a typographical error as no "Agair" reference is of record. Furthermore, as the response filed October 21, 2002 included no claim amendments, the present outstanding Action cannot be made final unless the previously relied upon --Agari-- reference was intended to be listed.

§707.07(f) requirement, Applicants repeat the actual arguments of the response filed October 21, 2002, (hereinafter “Response”) below in a different order and with further clarifying remarks.

In this respect, page 2 of the Response noted that the then “outstanding Action first adopts the reasoning for the rejection presented in the Office Action mailed on December 20, 2000, hereinafter referred to as the December 20 Action.” With specific regard to the reasoning of this December 20 Action, again referenced in the present outstanding Action, the Response pointed out the following at in the paragraph bridging pages 2-3:

Turning to the reasoning for the rejection presented in the December 20 Action, the reliance stated at page 2 thereof as to Chen is with regard to col. 7, lines 29-34 which is misstated to teach the doping of “the body of an SOI MOS transistor [to] minimize the RC time constant due to the body link.” What col. 7, lines 29-34 actually teach is controlling the RC time constant “in the body link or recessed region 20 from a respective channel to substrate contact 39” by providing an “appropriate doping concentration in recessed region 20.” No doping of the body of any SOI MOS transistor is taught “[to] minimize the RC time constant due to the body link” as erroneously stated here.

Thus, the argument was that the teaching of Chen at col. 7, lines 29-34 was misstated in the December 20 Action that continues to be relied upon, yet no reasoning is offered to explain why it was proper for the December 20 Action to ignore the clear statement of Chen as to controlling the RC time constant “in the body link or recessed region 20 from a respective channel to substrate contact 39” by providing an “appropriate doping concentration in recessed region 20,” much less why the present outstanding Action can be considered to be proper by continuing to ignore this full statement of Chen that is clearly part of the evidence of record that always must be considered in full. See In re Chu, 36 USPQ2d 1089, 1094 (Fed. Cir. 1995).

Not only was this point raised as to the actual teachings of relied on col. 7, lines 29-34

of Chen not noted and the substance thereof not answered in clear violation of MPEP §707.07(f), the further arguments as to deficiencies in the interpretation being offered as to Chen presented on page 3 of the Response have also not been noted and not answered in clear further violations of MPEP §707.07(f). In this regard, note the following unanswered points:

Moreover, while Chen further states (at col. 3, lines 19-22) that field effect transistors 26 formed on the mesas 24 have a “body” and that these “bodies of field effect transistors 26 are in ohmic contact due to recessed region 20 of silicon layer 18,” this has no relevance to doping the “body link or recessed region 20” that extends from “a respective channel” of each transistor to the “substrate contact 39.”

Moreover, as Chen already defines the body of each of these field effect transistors 26 to be apart from recessed region 20 that then serves to “link” (hence the name “body link”) each of these bodies of field effect transistors 26 to substrate contact 39, the reason why the artisan would look to Blake to define a transistor body is not set forth in violation of recent precedent. See In re Rouffet, 47 USPQ2d, 1453, 1459 requiring the PTO to “explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious.” [Emphasis added.]

Instead of answering these specific points as required by MPEP §707.07(f), the present outstanding Action attempts to maintain reliance on the misstatements of the teachings of Chen in the December 20 Action while suggesting that col. 5, lines 25-30 of Chen can be properly interpreted with only Figure 3 to some how ignore the statements of Chen noted above as well as at col. 5, lines 6-11 that clearly indicate that recessed region 20 and the channel region 32 under the MOSFET gate are different regions. Reference teachings must always be taken in context as noted at page 4 of the Response as to the attempt there to similarly take the word “body” out of context as follows:

Furthermore, page 2 of the outstanding Action errs in suggesting that the word “body” can be taken out of context from the other teachings of Chen. Such an approach is prohibited by the PTO reviewing court in In re Kotzab, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) as follows:

While the test for establishing an implicit teaching, motivation, or suggestion is what the . . . statements of [the reference] would have suggested to those of ordinary skill in the art, the [reference] statements cannot be viewed in the abstract. Rather, they must be considered in the context of the teaching of the entire reference. [Emphasis added.]

Clearly, whatever else can be **REASONABLY** said about the above noted Chen teaching of controlling the RC time constant "in the body link or recessed region 20 from a respective channel to substrate contact 39" by providing an "appropriate doping concentration in recessed region 20," it cannot be **REASONABLY** said to apply to include the channel region 32 under the gate of a transistor based on the further unreasonable interpretation that this channel region 32 is part of the "transistor body regions (underlying the gate electrodes of the transistors)" as urged at the bottom of page 2 of the present outstanding Action.

In this regard, it is a clearly erroneous approach to ignore the actual evidence of record in terms of the exact words of Chen as to what is meant by controlling the RC time constant "in the body link or recessed region 20 from a respective channel to substrate contact 39" by providing an "appropriate doping concentration in recessed region 20" and to substitute the examiner's teaching of controlling the "total RC time constant" as at the middle of page 3 of the present outstanding Action. However, there is no authority for the PTO to augment actual reference teachings in this manner. See In re Rijckaert, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

Further in this regard, the following unanswered points from pages 4-9 of the Response are noted:

Clearly, those skilled in the art would have no reason to believe that the "body link" of Chen relates to the channel 32 illustrated in Fig. 1 of Chen or anything illustrated to be above that channel such as the Fig. 1 illustrated gate 27 above the gate oxide 34 that is above each channel 32, see col. 3, lines 15-18 of Chen. Thus, the "C" of concern to Chen as to the col. 7, lines 29-34

teaching of controlling the "RC" time constant "in the body link or recessed region 20 from a respective channel to substrate contact 39" (emphasis added) precludes any consideration of gate capacitance relative to the Fig. 1 illustrated gate 27 above the gate oxide 34 that is above each channel 32, at least to those familiar with the clear meaning of the words used by Chen.

Thus, applicants do not argue that the prior art does not recognize the existence of gate capacitance as alleged at page 3 of the outstanding Action; instead, the argument is clear that whatever the "C" of concern to Chen as to the col. 7, lines 29-34 teaching of controlling the "RC" time constant "in the body link or recessed region 20 from a respective channel to substrate contact 39" (emphasis added) might be, it cannot be **REASONABLY** said to be gate capacitance between the surface above channel 32 separated from gate 27 by gate oxide 34, as none of these elements are "in the body link or recessed region 20 from a respective channel to substrate contact 39" (emphasis added). As noted above, just as gate capacitance between a gate and the substrate surface it is separated from by a gate oxide is not a capacitance "in the body link or recessed region 20" of Chen, it is also not a capacitance in the body node of Blake.

The argument of the Appeal Brief at pages 11-12 pointing out true sources of "C" "in the body link or recessed region 20 from a respective channel to substrate contact 39" (emphasis added) was just that, not a denial that gate capacitance does not exist **ELSEWHERE**. This argument remains relevant as the mere indication by Gunning of "drain-side capacitances," source-side capacitances" and "gate-substrate capacitance" and that of Masuda as to " C_{GP} ," " C_{GS} ," and " C_{PS} ," do not change the simple fact that the "C" of concern to Chen as to the col. 7, lines 29-34 teaching of controlling the "RC" time constant "in the body link or recessed region 20 from a respective channel to substrate contact 39" (emphasis added).

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Again, the evidence that is lacking is not that it is known that gate capacitance exists; rather, it is the lack of evidence that the artisan would expect gate capacitance to be present "in the body link or recessed region 20 from a respective channel to substrate contact 39" (emphasis added).

Moreover, it appears from the actual context of Chen that the "C" recited at col. 7, lines 29-33, is the junction capacitance from the background discussion at col. 1, lines 20-22, the lessening of which is said to lead to higher circuit speed. As further noted at col. 5, lines 6-11 of Chen, when "silicon layer 18 is fully-depleted under drain '28' and source 30 junctions for eliminating the parasitic capacitance and gaining circuit speed." col. 5, lines 11-14 of Chen go on to note that such full-depletion may require "counter-doping by ion implantation . . . to make the area beneath the source and drain fully depleted." This is clearly doping providing an "appropriate doping concentration in the body link 20" that will provide further circuit speed.

While col. 5, lines 19-27, of Chen go on to discuss the relationship of “sheet resistance of recessed region 20” and doping level in this recessed region 20, conspicuous by its absence is any hint of any concern with gate capacitance.

In this regard, it is the burden of the PTO to demonstrate a *prima facie* case of obviousness which means the PTO must show that the relied upon references teach all of the limitations of the claims without resort to speculation to fill gaps missing from reference teachings. Note the following from In re Warner, 154 USPQ 173, 178 (CCPA 1967):

A rejection based on section 103 clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art. In making this evaluation, all facts must be considered. The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not, because it may doubt that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis. To the extent the Patent Office rulings are so supported, there is no basis for resolving doubts against their correctness. Likewise, we may not resolve doubts in favor of the Patent Office determination when there are deficiencies in the record as to the necessary factual bases supporting its legal conclusion of obviousness. [Emphasis added.]

Instead of such evidence, page 3 of the outstanding Action seeks to substitute distortion of the actual teaching of col. 7, lines 29-34 of Chen as to of controlling the “RC” time constant “in the body link or recessed region 20 from a respective channel to substrate contact 39” (emphasis added) into a teaching that “refers to the total RC time constant” that is then further distorted to be the “sum of all contributing RC time constants as explained in the Agari reference.”

The express teaching of Chen as to of controlling the “RC” time constant “in the body link or recessed region 20 from a respective channel to substrate contact 39” (emphasis added) is ignored in violation of In re Kotzab, supra, and this error is compounded by a further distortion of the Agari teachings as to “minimizing RC delay from the resistance value and the capacitance value of each wiring part” (emphasis added, see the bottom of page 2 of the December 20 Action) into some kind of “sum of all contributing RC time constants” from other than just wiring parts. The basis for this distortion of the actual teachings of Agari has been omitted in clear violation of the directive in In re Rijckaert, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (“When the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference.”).

Moreover, where is the discussion to be found of the In re Roufett, supra, required reasons explaining why “one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious.” [Emphasis added.]. Again, the express teaching of Chen is to capacitance “C” “in the body link or recessed region 20 from a respective channel to substrate contact 39” (emphasis added), while the express Agari teachings relate to the capacitance “C” between wiring parts spaced from each other above a substrate surface.

Rather than again repeating the relevant unanswered arguments from the brief and other sources treated at 5-7 of the Response, these repeated and unanswered arguments are incorporated herein by reference.

With further regard to the above noted improper reliance on Blake that has not been answered in the present outstanding Action, the points raised as to Blake at page 3 and Blake and the Sze text at page 4 of the response have also not been answered in further clear violation of MPEP §707.07(f). These unanswered points are repeated as follows:

Furthermore, whatever Blake defines to be a “body node” (at col. 1, lines 55-58) in terms of an “undepleted volume within the body region underlying the gate electrode,” in no way modifies the teachings of Chen that there is a “body link, or recessed region 20 from a respective channel to substrate contact 39” that is separate from the “bodies” of transistors 26 as Chen uses these terms. Clearly, each transistor “body” 26 of Chen is not the same thing as the “body link” that is equated by Chen to the recessed region 20 at col. 7, line 3.

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In addition, the teachings of Blake at col. 1, lines 55-68 and col. 5, lines 23, 33, 37, and 53-60, all noted as being relied upon in the outstanding Action, make it clear that the “body node,” the “undepleted volume under the gate electrode,” “is below the channel of transistor 100 when conducting,” see Blake at col. 5, lines 59-60. This means that Blake teaches the body node is actually more distant from any gate electrode and gate electrode capacitance than immediately below the channel. See the “depletion regions” of Figs. 35 and 36 from pages 203 and 204 of Sze, SEMICONDUCTOR DEVICES, Physics and Technology, 1985, attached hereto. Just as gate capacitance between a gate and the substrate surface it is separated from by a gate oxide is not a capacitance “in the body link or recessed region 20” of Chen, it is also not a capacitance in the body node of Blake. In addition to not answering the points raised as to Blake, the present outstanding

Action fails to note and respond to the following points raised as to Gunning at pages 9 and 10 of the response as follows:

Furthermore, Gunning is a reference concerned with “drivers and receivers for interfacing CMOS (complementary metal oxide semiconductor) digital circuits to transmission lines and, more particularly to relatively low power drivers and relatively sensitive receivers for interfacing VSLI (very large scale integrated) CMOS circuits to relatively low impedance, terminated transmission lines” as noted at col. 1, lines 6-12. Where are the Roufett reasons why one of ordinary skill in the art would have been motivated to select Gunning and Chen and to combine them or is the examiner suggesting that col. 7, lines 4-11 description of the Fig. 4 VLSI CMOS transmission line GTL driver is in actuality explaining the Chen SOI CMOS integrated circuit operation?

Once again, conjecture and assumptions are substituted for evidence in terms of unreasonably lifting unrelated reference teachings from the context of disparate references and then augmenting them in an irrational manner using the present claims as the guide.

Rather than again repeating the relevant arguments from the appeal brief that were repeated at pages 9-13 of the Response, these repeated arguments are incorporated herein by reference.

With regard to the response to the arguments repeated from the appeal brief at pages 11-13 of the Response, page 3, lines 1-8 of the present outstanding Action appear to present a new theory of patent law that the patentability of any method for making a product depends on the patentability of the product, the specific steps called for and claim interpretation precedent cited in the appeal brief notwithstanding. This new theory not only ignores this noted precedent, it appears to dispute the well established criteria under restriction practice that the product and the method for making it are distinct if a materially different process can be used to make that product. It is believed that citation of controlling precedent contrary to the precedent noted at this portion of the Response and the above-noted restriction practice is clearly required to support the examiner’s apparent subjective theory of the examination of

method claims based upon ignoring the steps of those method claims and concentrating on the patentability of the product produced. This approach is further suspect here where not one of the applied references even suggests determining a layout pattern of an MOS transistor, much less determining a layout pattern of an MOS transistor based on the operating frequency of a predetermined clock as Claim 1 recites.

In addition, page 2 of the response pointed out that the reliance upon Blake, Gunning, and Masuda as sources of definitions and teachings alleged to be “well-known to one having ordinary skill in the art” was misplaced as follows:

The evidence offered to support the assertion of these teachings being “well-known” is not the proper kind of evidence under the well established rule of In re Ahlert, 165 USPQ 418, 421 (CCPA 1970) requiring that “assertions of technical facts in areas of esoteric technology must always be supported by citation of some reference work.” Patents, even plural patents, have been held to not be weighty evidence of wide spread recognition. See In re Barr, 170 USPQ 330, 333-34 (CCPA 1971) (“[W]e agree with the solicitor that these patents are not weighty evidence of art recognition . . .”).

Once again, applicants’ points are ignored along with the requirements of MPEP §707.07(f) because no attempt is made to answer the substance thereof.

As noted at pages 13 and 14 of the Response and further unanswered by the present outstanding Action:

Besides the outstanding Action and the relied upon December 20 Action failing to properly analyze the limitations of Claims 1 and 2, the relied upon December 20 Action appears to be at odds with the newly presented arguments of the outstanding Action that urge gate capacitance associated with gate 27 as being included in the capacitance “C” of concern to Chen. In this regard, page 3 of the relied upon December 20 Action states that the teaching of Agari as to minimizing “the RC time constant of each wiring part” would be applied relative to the “body contact as taught by Chen et al.” However, this “body contact” language appears to be referencing substrate contact 39, not gate 27.

In essence, the outstanding Action and the December 20 Action do little more than attempt to show that there was knowledge that RC time

constants associated with wiring can be controlled to control circuit speed, that the capacitance associated with the gate of an MOS transistor was also known, that the general structure of SOI MOS transistors with a single body contact was further known, and that controlling the RC time constant in a body link from below MOS transistor channels to such a single body contact was also known and then suggest that the artisan would have been able to combine what was known to meet the claimed invention. This approach by the PTO is not new and has been routinely dismissed by the courts as improper. See the recent explanation of impropriety set forth by In re Rouffet, at 47 USPQ2d 1457-58 as follows:

As this court has stated, "virtually all [inventions] are combinations of old elements." *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698, 218 USPQ 865, 870 (Fed. Cir. 1983); see also *Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1579-80, 219 USPQ 8, 12 (Fed. Cir. 1983) ("Most, if not all, inventions are combinations and mostly of old elements."). Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570, 38 USPQ2d 1551, 1554 (Fed. Cir. 1996).

To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. [Emphasis added].

With specific regard to Claim 2 and 4, the discussion starting at the bottom of page 5 and continuing through the top of page 8 of the response filed March 20, 2001, was noted at pages 14-15 of the Response. Rather than again repeating these relevant unanswered arguments, these repeated unanswered arguments are incorporated herein by reference.

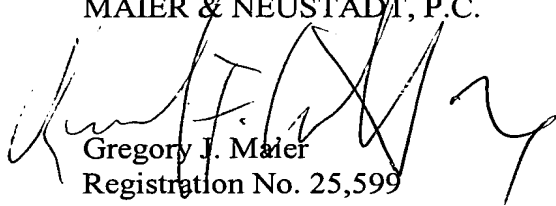
Finally, page 16 of the Response noted the unanswered points that:

It is further noted that Claims 5 and 18 are specific to a semiconductor device having a particular resistance for the fixed potential transmission path primarily determined by body region 14 resistance defined in part by the thickness of the SOI layer times the length of the fixed potential transmission path along the gate length of the gate electrode. The various Office Actions presented throughout the present extensive prosecution have not set forth any attempt at a *prima facie* case of obviousness that addresses these limitations. Without such a *prima facie* case of obviousness, In re Fine, 5 USPQ2d 1596, 1598-99 (Fed. Cir. 1988) indicates that the Claims 5 and 18 cannot be reasonably rejected under 35 U.S.C. §103 and this rejection is also traversed.

As no other issues are believed to be outstanding in the present application, it is believed to be clearly in condition for formal allowance. Consequently, an early and favorable action to that effect is earnestly and respectfully requested.

Respectfully submitted,

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